

ABSTRACT OF THE DISCLOSURE

A gamma camera system having a small field of view that includes a plurality of modules, a module support board on which the modules are mounted, a module interface board, signal amplifier and detection logic mounted on the module support board, a computer interface board mounted in a computer and connected to an internal bus in the computer, and a serial connection between the module support board and the computer interface board. Each module includes a scintillation crystal array, a photodiode array coupled to the scintillation crystal array, a first PETRIC circuit coupled to the array of photodiodes in parallel to determine the crystal of highest peak analog signal and its address in the array and provide an output thereof. A second PETRIC circuit receives the analog outputs of the first PETRIC circuits and determines the crystal of the highest peak analog signal of all the modules and its address in the arrays and provides an output thereof. An analog-to-digital converter receives the output of the second PETRIC and outputs a corresponding digital signal. A first programmable field gate array is mounted on the module interface board to receive the digital signals and to output in serial fashion. A serial connection between the module interface board and the computer interface board receives the serialized digital signals output by the first programmable field gate array. A second programmable field gate array mounted on the computer interface board receives the serialized digital signals from the serial connection. A microprocessor with memory is mounted on the computer interface board to receive the digital signals from the second programmable field gate array, store the signals and output the signals in parallel fashion, and a circuit mounted on the computer interface board to receive the signals in parallel from the microprocessor and to forward them to the computer via its internal bus.